

Water Saver Bingo



Objectives:

- Determine the average amount of water used through daily activities.
- Recognize that large quantities of water can be wasted from a dripping faucet.
- Describe different water waste scenarios at home, in school, and around the neighborhood.
- Discuss the importance of water conservation strategies.

Materials:

- 1 poster board
- Markers for poster board

Materials for Warm Up:

- 1 gallon of water. (Put a small nail hole in the bottom of the gallon. Water should drip rather than stream from the hole. Cover the hole with tape until ready to begin the warm-up activity).
- 25 empty gallon containers*. This will be used to demonstrate how much water is used during a 5-minute shower. Hide the containers, from the students, before the warm-up activity. *Note: You can pick up the 25 empty gallon containers from the Glendale Water Conservation Office located at 5959 W. Brown Street, Glendale, AZ 85302. Call (623) 930-3535 to arrange a pick-up time.
- 1 bucket or garbage can to collect dripping water from the leaking gallon (Note: Re-use the water for a plant).
- 1 watch to monitor time

Materials for Water Saver Bingo:

- Markers
- Pencils (one per student)
- 10 water saver bingo sheets (one per student)
- 30 water saving device cards (picture cards for pre-K to 2nd graders)
- 30 water saving device cards (text cards for 3rd graders and up)
- 10 glass bead bags (each bag contains 25 beads)
- Water saver sheets - Draw Two Ways in Which You Can Save Water (one per student)
- Water saver awards (one per student)
- Water tracker sheets (one per student)
- 1 Water Use it Wisely poster

Key Vocabulary for Instructors:

Drip emitter – A term used with drip irrigation. The emitter, or dripper, is a small device that controls the flow going to the soil. Emitters come in many different flow rates and styles.

Mulch – A protective covering spread or left on the ground to reduce evaporation, maintain even soil temperature, prevent erosion, control weeds, or enrich the soil.

Rain gauge – An instrument for measuring the quantity of water.

Water meter – An instrument for recording the quantity of water passing through a particular outlet. A water meter measures the volume of water used by a household.

Key Vocabulary for Students:

Conservation - The use of water-saving methods to reduce the amount of water needed for homes, lawns, farming and industry, and thus increasing water supplies for optimum long-term economic and social benefits.

Evaporation – The conversion of a liquid (e.g. water) into a vapor (a gaseous state) usually through the application of heat energy; the opposite of condensation. Example: steam from boiling water.

Irrigation – To supply land with water by artificial means.

Precipitation – Liquid or solid water falling from the sky, includes rain, snow, hail and sleet.

Warm Up:

Start off by writing all the key vocabulary words, for students, on a poster board. Ask the students if they know the definitions. Write down the definitions after you have gotten student involvement.

Show the students a gallon of water. **How much does a gallon of water weigh?** *A gallon of water weighs approximately 8 pounds (8.34 pounds).*

How much water does the average American use everyday?

The average American uses 123 gallons of water per day!

Tell the students to think about different ways in which they use water everyday at home and school. Show the students 25 empty gallon containers and inform the students that they use 25 gallons of water for a 5-minute shower!

How much water is used during the following activities?

Water Using Activity	Number of Gallons Used
Wash dishes by hand	20 gallons
Shower	5 gallons a minute
Washing machine (one cycle)	50 gallons
Water lawn 10 minutes	75 gallons
Wash car with hose running	180 gallons
Dishwasher (one cycle)	12 to 15 gallons
Toilet flush	5 to 7 gallons
Bath	30 gallons
Wash hands with water running	3 gallons
Brush teeth two minutes with water running	6 gallons
Leaking or running toilet	50 gallons a day
Drink	2 to 3 gallons a day

Write down the actual number of gallons used, per activity, on a poster board. Next, inform the students that a lot of water is also wasted everyday throughout the community. Explain that water is not a free resource and that means a lot of money is wasted everyday, too. Have the students generate a list of activities that can waste water.

Inform the students that even a small leak, from a faucet or toilet, can result in a large quantity of water wasted over time. Set the gallon, with the hole in the bottom, on a table and place a bucket underneath. Remove the tape and allow the dripping to begin. Record the time as soon as the dripping begins. Have the students guess how long it will take for the gallon to empty. Inform the students that a leaky faucet, that loses a drop per second, would fill 16 bathtubs per month!

Show the students the Water Use It Wisely poster. **Have you ever heard of the Water Use It Wisely message, “There are a number of ways to save water and they all start with you?”** Announce to the students that they will get the opportunity to play Water Saver Bingo!

Activity*: Water Saver Bingo

Note*: This activity has 10 bingo cards, so students may be paired together to accommodate up to 20 students.

For students in pre-K to 2nd grade:

1. Each student gets a **Water Saver Bingo** board and a bag of beads.
2. Each student gets to put a bead on the **Water Use it Wisely** center square.
3. Pick a **Water Saving Device** card and show the picture to the students. Have the students match the picture, on the card, to the corresponding picture on their **Water Saver Bingo** board. In addition, read the water saving device description to the students. Repeat this process until one of the students announces B-I-N-G-O. Use the straight-line BINGO pattern (vertical, horizontal, or diagonal).

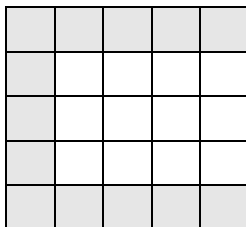
4. The first student to announce B-I-N-G-O is the winner. The student will show the instructor what pictures they matched. The winner can then write their name on a Water Saver Award. The instructor can continue the game until all the students announce B-I-N-G-O and get their name on a Water Saver Award.

For students in 3rd grade and up:

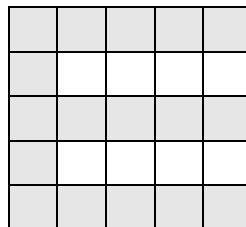
1. Each student gets a **Water Saver Bingo** board and a bag of beads.
2. Each student gets to put a bead on the **Water Use it Wisely** center square.
3. Pick a **Water Saving Device** card and read the description to the students. Have the students match the description, on the card, to the corresponding picture on their **Water Saver Bingo** board. Repeat this process until one of the students announces B-I-N-G-O). Use a more complicated BINGO pattern of the leader's choosing (C, E, F, H, L, O, T, U, X, and whole sheet).

BINGO Patterns:

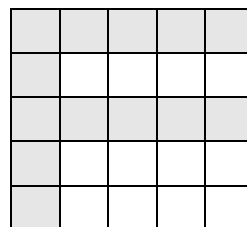
C



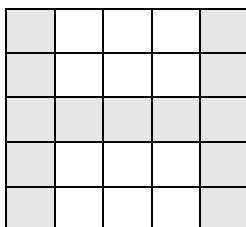
E



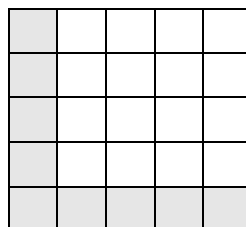
F



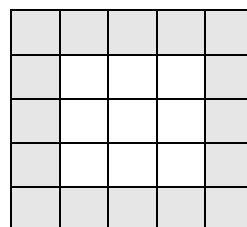
H



L



O



BINGO Patterns:

T

U

X

Whole sheet

4. The first student to announce B-I-N-G-O is the winner. The student will tell the instructor what pictures they matched. The winner can then write their name on a Water Saver Award. The instructor can continue the game until all the students announce B-I-N-G-O and get their name on a Water Saver Award.

Follow Up:

Distribute the water saver sheets. Ask the students to draw two ways in which they can conserve water.

Distribute the water tracker sheets. Have the students use the sheets to record their water use throughout one day.

Distribute the Ins and Outs of Water Conservation Water Survey. Have the students fill out the sheets. Review the questions with the students and talk about ways to save water.

Review the vocabulary words with the students.

References:

Conserve Water (2004), Project Wet International Foundation.

Conserve Water! Educator's Guide (2000), The Watercourse. The Ins and Outs of Water Conservation Water Survey – pg. 23-28.

Project Wet Curriculum and Activity Guide (1995), The Watercourse and the Council for Environmental Education. Money Down the Drain - pg. 328-332.

Water Use It Wisely poster. <http://www.wateruseitwisely.com/>

Who is responsible for saving water and teaching others to save water too?

Answer: You

What should you put in the refrigerator instead of running the tap for cold drinks?
You can save 5 gallons of water.

Answer: Water Pitcher

What should you check, outside your home, to track your water usage?

Answer: Water Meter

How can you keep track of the time of day that you water your lawn? You can save 100 gallons of water, per day, by watering your lawn in the morning or evening when temperatures are cooler to minimize evaporation.

Answer: Clock or Sundial

What can you use to place a layer of organic mulch around your plants? You can save hundreds of gallons of water per year.

Answer: Garden Tool or Shovel

What can you use to clean your driveway and sidewalk? You can save up to 80 gallons of water per year.

Answer: Broom

What can you put on your showerhead to save water? You can save 20 gallons of water per shower.

Answer: Low-flow Showerhead

What can you use to collect rainwater for your plants? You can save one gallon of water.

Answer: Watering Can

What can you check,
both inside and outside
your home, for leaks?

Answer: Faucet

How can you keep track of
the amount of time that
you are in the shower?
If you keep your shower under
5 minutes, you can save up
to 1,000 gallons of
water per month.

Answer: Clock or Kitchen Timer

What can you put in your
toilet tank to check if the
toilet is leaking? You can save
600 gallons of water per month.

Answer: Food Coloring

What can you install in your
yard so that your plants
receive water efficiently?
You can save hundreds of
gallons of water per day.

Answer: Drip Emitter

What can you use to fix a
leaky faucet?
You can save 140 gallons
of water per week.

Answer: Wrench

What can remind you take shorter
showers? If you keep your
shower under 5 minutes,
you can save up to 1,000
gallons of water per month.

**Answer: Soap, Clock, or Kitchen
Timer**

What can you put in your yard to
show you that it is windy outside?
You can save a100 gallons of water,
per day, by not watering your plants
when it is windy.

Answer: Pinwheel

What can remind you to turn off the
water when you're brushing your
teeth? You can save 4 gallons of
water per minute.

Answer: Toothbrush

What can you put in your yard to keep track of how much rain your yard received? You can save hundreds of gallons of water, per day, by not watering when it is raining.

Answer: Rain Gauge

How can you keep track of the amount of time that you are watering your plants outside?

Answer: Clock or Kitchen Timer

What type of plant can you put in your yard to save water? You can save over 500 gallons of water per year.

Answer: Low-Water-Use Plant

What can you put your trash in instead of flushing it down the toilet? You can save 5 gallons of water per flush.

Answer: Wastebasket

What can you use put on y
our hose to stop the water
temporarily while you are washing
your bike or car? You can save more
than 100 gallons of water per day.

Answer: Hose Nozzle

What can you put in your toilet tank
to reduce the amount of water used
for each flush? You can save one
gallon of water per flush.

Answer: Tank Bank

What can remind you to have a full
load in your washing machine? You
can save up to 600 gallons of water
per month.

Answer: Laundry Scoop

What can you use to report water
waste in your neighborhood?

Answer: Telephone

What can you use to listen for dripping faucets and toilets? You can save 500 gallons of water per month.

Answer: Ears

What can you remind you that plants need different amounts of water throughout the year?

Answer: Calendar

What can you put in your yard to catch and measure the amount of water output of your sprinklers?

Answer: Tuna Can or Watering Can

What can remind you to turn off the water when you're shaving? You can save more than 100 gallons of water per week.

Answer: Razor

Name: _____



Draw Two Ways in Which You Can Save Water!

A large rectangular box with a dotted border, intended for drawing the first way to save water.A large rectangular box with a dotted border, intended for drawing the second way to save water.

Water Saver Bingo Award



I promise to do two things every day to save water at home and school!

Name: _____

Water Saver Bingo Award



I promise to do two things every day to save water at home and school!

Name: _____